

CLAIMS

1. An alkaline battery comprising a cathode mix containing β -nickel oxy-hydroxide as a cathode active material, an anode mix containing zinc as a main component of an anode active material, and an alkaline solution as an electrolyte,

wherein said β -nickel oxy-hydroxide is obtained by chemical oxidation of nickel hydroxide;

wherein said β -nickel oxy-hydroxide has a mean particle size in the range of 5 to 50 μm ; and

wherein said β -nickel oxy-hydroxide has an approximately spherical shape of particle.

2. The alkaline battery according to Claim 1, wherein cumulative pore volume in connection with pore sizes of not larger than 0.5 μm in said β -nickel oxy-hydroxide particles is in the range of 10 to 60 $\mu\text{l/g}$.

3. The alkaline battery according to Claim 1, wherein proportion of sulfuric acid radial contained in said β -nickel oxy-hydroxide is in the range of not larger than 0.5% by weight.

4. The alkaline battery according to Claim 1, wherein a bottom-sealed cylindrical battery is formed.

5. An alkaline battery comprising a cathode mix containing β-nickel oxy-hydroxide and manganese dioxide as cathode active materials, an anode mix containing zinc as a main component of an anode active material, and an alkaline solution as an electrolyte,

wherein said β-nickel oxy-hydroxide is obtained by chemical oxidation of nickel hydroxide;

wherein said β-nickel oxy-hydroxide has a mean particle size in the range of 5 to 50 μm ; and

wherein said manganese dioxide has a mean particle size in the range of 10 to 70 μm .

6. The alkaline battery according to Claim 5, wherein said β-nickel oxy-hydroxide has an approximately spherical shape of particle.

7. The alkaline battery according to Claim 6, wherein cumulative pore volume in connection with pore sizes of not larger than 0.5 μm in mixed particles of said β-nickel oxy-hydroxide particles and said manganese dioxide is in the range of 10 to 60 $\mu\text{l/g}$.

8. The alkaline battery according to Claim 6, wherein proportion of sulfuric acid radial contained in said β-nickel oxy-hydroxide is in the range of not larger than 0.5% by weight.

9. The alkaline battery according to Claim 6, wherein a bottom-sealed cylindrical battery is formed.

10. An alkaline battery comprising a cathode mix containing β -nickel oxy-hydroxide and a conductive material as a cathode active material, an anode mix containing zinc as a main component of an anode active material, an alkaline solution as an electrolyte, and a separator disposed between a cathode comprising said cathode mix and an anode comprising said anode mix, wherein said β -nickel oxy-hydroxide is obtained by chemical oxidation of nickel hydroxide, and
wherein said cathode mix includes a fluorinated resin as a binder.

11. The alkaline battery according to Claim 10, wherein an amount of said added fluorinated resin is in the range of 0.1 to 1.0% by weight.

12. The alkaline battery according to Claim 10, wherein said fluorinated resin is any one of polytetrafluoroethylene (PTFE), tetrafluoroethylene-hexafluoropropylene copolymer (FEP) and polychlorotrifluoroethylene (PCTFE).

13. The alkaline battery according to Claim 10, wherein a porous metal cylinder is provided between said cathode and said separator.

14. The alkaline battery according to Claim 13, wherein said porous metal cylinder has a thickness of 50 to 200 μm , and is formed of at least a kind of metal selected from the group constituting of stainless steel, nickel, copper, and tin.

15. The alkaline battery according to Claim 13, wherein said porous metal cylinder comprises any one of punching metal, metal net, and expand metal.